

CLAIMS

1. A rotation angle-detecting device comprising:

a main rotator;

5 a first detecting rotator having a contact with the main rotator, the first detecting rotator rotating faster than the main rotator;

a first magnet disposed at a center of the first detecting rotator;

a first magnetic detector disposed adjacent to a surface opposite to the first magnet;

10 a second detecting rotator having a contact with the first detecting rotator, the second detecting rotator differently rotating in speed from the first detecting rotator;

a second magnet disposed at a center of the second detecting rotator;

15 a second magnetic detector disposed adjacent to a surface opposite to the second magnet; and

a ferromagnetic body disposed so as to encircle at least any one of the first magnet, the second magnet, the first magnetic detector, and the second magnetic detector.

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2. The rotation angle-detecting device of Claim 1, wherein each of the first magnetic detector and the second magnetic detector has an anisotropic magnetic resistance element.

25 3. The rotation angle-detecting device of Claim 1, wherein the ferromagnetic body is incorporated in any one of the first detecting rotator and the second detecting rotator.

4. The rotation angle-detecting device of Claim 1, wherein the ferromagnetic body is incorporated in any one of the first magnetic detector and the second magnetic detector.

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5. The rotation angle-detecting device of Claim 1, wherein the ferromagnetic body is any one of a first ferromagnetic body and a second ferromagnetic body, and the first ferromagnetic body is incorporated in any one of the first detecting rotator and the first magnetic detector; the second
10 ferromagnetic body is incorporated in any one of the second detecting rotator and the second magnetic detector.

6. The rotation angle-detecting device of Claim 1, wherein the ferromagnetic body is made of a ring-shaped iron plate.

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7. The rotation angle-detecting device of Claim 1, wherein the ferromagnetic body is formed of pieces arranged in a form of a ring.

8. The rotation angle-detecting device of Claim 1 further comprising a
20 calculator for calculating a rotation angle of the main rotator according to output from the first magnetic detector and the second magnetic detector.

9. The rotation angle-detecting device of Claim 8, wherein the calculator calculates the rotation angle of the main rotator from phase difference in output
25 between the first magnetic detector and the second magnetic detector.